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ABSTRACT

An instrument for to assessing the extent to which postsecondary vocational education programs are competency-based consisted of 159 items grouped into 8 subscales corresponding to 4 standards: (1) identification and validation of competencies; (2) procedures for assessing student competencies; (3) instructional procedures; and (4) administrative support. The items were reviewed by a national sample of vocational curriculum specialists/content experts (N=14) who rated each item on the extent to which it differentiated between competency-based and conventional vocational education. Each item was classified as having received high, moderate, or low agreement. A log-linear analysis was completed with the item as the unit of analysis. Results indicate that agreement among raters was higher with the items from acknowledged competency-based programs than from programs identified as conventional, and was lower for items related to the basic standards of competency-based vocational education than for the facilitating standards. Two data tables are included. (Author/SLD)

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THE EXTENT OF AGREEMENT ON A DEFINITION OF COMPETENCY BASED VOCATIONAL EDUCATION AMONG VOCATIONAL CURRICULUM SPECIALISTS

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The Extent of Agreement on a Definition of Competency Based Vocational Education Among Vocational Curriculum Specialists

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ABSTRACT. An instrument developed to assess the extent to which postsecondary vocational programs are competency-based consisted of 159 items grouped into 8 sub-scales. The items were reviewed by a national sample of content experts who rated each item on the extent to which it differentiated between competency-based and conventional vocational education. Each item was classified as having received high, moderate, or low agreement. A log-linear analysis was completed with the item as the unit of analysis. The results indicated that agreement was higher with CBVE items than with conventional vocational items and was lower for items related to the basic standards of CBVE than for the facilitating standards.

Several state divisions of vocational education strongly advocate the development of postsecondary competency-based vocational education (CBVE) at local vocational/technical centers and community colleges. Yet, a clear definition of CBVE and a list of characteristics that distinguish it from conventional vocational education have not emerged. The lack of a generally accepted definition has led to confusion and misunderstanding among administrators and instructors. Evaluation and policy studies have described many of the varied perceptions of CBVE. For example, administrators often incorrectly equate CBVE with admission policies such as open-entry/open-exit or the use of student learning guides. Instructors who use a wide array of conventional and innovative instruc-

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tional and student assessment strategies all claim to use the CBVE approach. It seems that strong state department advocacy for CBVE without a clear definition or guidelines has permitted vocational educators to assign the CBVE label to most any format for occupational training (Carroll, 1980, Ridley & Farrer, 1982; Florida Department of Education, 1983; Sorg et al., 1984; MGT of America, Inc., 1984; Fardig & Sorg, 1985; Lange, 1985).

State boards of education and state advisory councils for vocational and technical education have expressed concern about state policies, expenditures, and activities related to the development of CBVE. Policy studies have provided little information on the relative effectiveness of CBVE and conventional programs because there has been no accepted method to clearly distinguish between the two types of programs.

In response to the need for better communication about CBVE, Fardig and his associates proposed the use of four standards to distinguish conventional vocational education from CBVE (Fardig and Sorg, 1985; Sorg et al., 1984). The two basic standards concern the identification and local validation of competencies and the procedures for assessing student competencies. These two standards are seen as the important or essential characteristics of a CBVE program. The two remaining standards, instructional procedures and administrative support, facilitate the delivery of CBVE. Vocational programs that satisfy the two basic standards are likely to satisfy the other standards. However, programs that comply with the instructional procedure and administrative support standards without satisfying the two basic standards cannot be correctly classified as CBVE programs.

In 1983, Florida's Governor Bob Graham and his staff requested an evaluation of the state policies, expenditures, and activities related to competency-based vocational education. Among other concerns, they wanted comparative information on the effectiveness of CBVE and conventional programs. The evaluators engaged by the Florida State Advisory Council on Vocational and Technical Education reported that they could not compare the effectiveness of the two types of programs because there was no accepted method to

identify the extent to which a program was competency-based (MGT of America, Inc., 1984). In response to the problem identified by MGT and at the request of the state leadership, the Florida Division of Vocational, Adult, and Community Education requested the development and field test of an instrument that would help assess the extent to which a local post-secondary program was competency-based (Lange, 1985). The purposes of this study were to develop and field test such an instrument and to determine whether there were different levels of agreement among vocational education curriculum specialists on the items that were associated with each of the four standards proposed by Fardig and Sorg (1985) and Sorg et al. (1984).

Methodology

Instrument

An instrument that would help assess the extent to which a postsecondary program was competency based (Lange, 1985) was developed by writing items and grouping them into subscales that corresponded to the four standards. Based on a review of the literature and previous experience in studying CBVE, the staff and project consultants wrote more than 250 descriptive statements on competency-based and conventional programs. All of the statements were reviewed by the consultants. Following the review, a pilot instrument was constructed and tested with five vocational training programs that the consultants accepted as competency-based and five programs they classified as conventional. Following the pilot test, several items were revised or deleted and a few were added. The final set of 159 items was grouped into eight subscales: 1) knowledge instruction, 2) performance instruction, 3) individualization, 4) administrative support, 5) method of identifying competencies, 6) knowledge assessment, 7) performance assessment, and 8) grading procedures.

The instruments were sent to a group of 20 vocational curriculum specialists throughout the country. These specialists, were to independently review the

items and rate, using a 13 point scale, the extent to which each item described either CBVE or conventional vocational education. One end of the scale was anchored with "Very much like CBVE," and the opposite end was anchored with "Very much like conventional vocational education." The center point on the scale was anchored with "Applies equally to CBVE and conventional vocational education." In addition to their ratings, each specialist was asked to comment on the items.

Fourteen of the twenty vocational curriculum specialists returned the survey instruments. Frequency distributions of the ratings for each item were generated. Based on the pattern of ratings, each item was classified into one of three categories: high, moderate, or low agreement. High agreement required that thirteen of the ratings be contained within a three point range. Low agreement was used for items with more than three ratings on both sides of the central point that also had a range greater than five. Moderate agreement was used for the remaining items.

Analysis

The unit of analysis for the study was the item. Each item was associated with two nominal independent variables (program type and subscale) and one ordered categorical dependent variable (level of agreement); a 2x8x3 design. The research design was ex-post-facto and quasi-experimental without randomization (Campbell and Stanley, 1966). Frequency distributions, cross-tabulations, and a log-linear analysis were produced.

Results

The frequency distributions and cross-tabulations are summarized in Table 1. As indicated by the grand totals, proportions for high, moderate, and low agreement were 33 percent, 60 percent, and 8 percent respectively. The horizontal marginals indicate that agreement was stronger for the CBVE items than for the conventional items; 42 percent versus 23 percent high agreement. The vertical marginals reveal that the subscale on knowledge instruction had the greatest

TABLE 1

Frequencies and Percentages for Agreement by Program Type and Subscale

	Program Type						Marginal Totals		
	CBVE			Conventional					
	Agreement			Agreement			Agreement		
Subscale	H	M	L	H	M	L	H	M	L
Knowledge Instruction	5 (.71)	2 (.29)	0 (.00)	3 (.38)	4 (.50)	1 (.13)	8 (.53)	6 (.40)	1 (.07)
Performance Instruction	7 (.58)	4 (.33)	1 (.08)	2 (.16)	9 (.75)	1 (.08)	9 (.38)	13 (.54)	2 (.08)
Individual-ization	4 (.27)	10 (.67)	1 (.07)	4 (.57)	3 (.43)	0 (.00)	8 (.36)	13 (.59)	1 (.05)
Administra-tive Support	5 (.38)	8 (.62)	0 (.00)	5 (.42)	7 (.58)	0 (.00)	10 (.40)	15 (.60)	0 (.00)
Identifying Competencies	6 (.43)	7 (.50)	1 (.07)	1 (.06)	11 (.69)	4 (.25)	7 (.23)	18 (.60)	5 (.17)
Knowledge Assessment	1 (.14)	6 (.86)	0 (.00)	2 (.29)	4 (.57)	1 (.14)	3 (.21)	10 (.71)	1 (.07)
Performance Assessment	4 (.40)	6 (.60)	0 (.00)	1 (.09)	10 (.91)	0 (.00)	5 (.24)	16 (.76)	0 (.00)
Grading	2 (.50)	1 (.25)	1 (.25)	0 (.00)	3 (.75)	1 (.25)	2 (.25)	4 (.50)	2 (.25)
							Grand Totals		
Marginal Totals	34 (.41)	44 (.54)	4 (.05)	18 (.23)	51 (.66)	8 (.10)	52 (.33)	95 (.60)	12 (.07)

agreement, i.e., 53 percent high agreement. The proportions of high agreement on the performance instruction, individualization, and administrative support subscales were 38 percent, 36 percent, and 40 percent respectively. The subscales associated with the two proposed basic standards had the lowest agreement.

For purposes of log-linear analysis, the low and moderate agreement categories were combined to avoid excessive empty cells. The subscales were also collapsed into three groups knowledge instruction, other instruction and support (subscales 2,3,4) and basic standards (subscales 5, 6, 7, 8). Knowledge instruction was placed in a separate category because it often differs markedly from the other facilitating aspects of program procedures. The remaining subscales were clustered into sets that represented the facilitating standards and basic standards. The 2x3x2 asymmetric design had two independent factors: program type with two levels (CBVE and conventional) and subscales with three levels (knowledge instruction, other instruction and support, and basic standards). The dependent variable, agreement, had two levels (high and moderate). The results of the component log-linear analysis are reported in Table 2.

The two independent factors had statistically significant effects: L^2 (1) = 6.0, $p < .05$ and L^2 (2) = 6.5, $p < .05$). The interaction effect was not statistically significant. The z-tests of the lambda values for the subscale effect (3.102, -0.112, -2.99) indicated the differences between agreement among all three collapsed sets of subscales were statistically significant. The large L^2 values for the subscale and agreement marginals reflected the fact that there were different numbers of items at each level of the two variables.

To determine whether the marginal and conditional main effects of the independent factors were different, the order of entry in the independent factors was reversed in a second analysis. The resulting component L^2 values for the effects changed very little, from 6.5 to 6.7 and from 6.0 to 5.8 for subscales and program type respectively.

Table 2

Log-Linear Component Analysis for Program Type, Subscales, and Agreement

Models	L^2	df
Marginals		
Program Type	0.2	1
Subscale	50.4	2
Agreement	19.4	1
Program Type X Subscale	1.2	2
Logits		
Program Type effect	6.0*	1
Subscale effect	6.5*	2
Interaction effect	3.6	2

*$p < .05$

Discussion

The study investigated vocational education curriculum specialists' agreement about the characteristics of competency-based and conventional education programs. The data indicate that overall agreement was moderately high. Although the agreement was not universal, there was reasonable support for the validity of the scores generated by the instrument. It might be expected that curriculum specialists who are expert in CBVE would be in high agreement on the majority of descriptive statements. Such was not the case. The failure to obtain consistently high agreement may explain part of the confusion about CBVE often found among local vocational instructors and administrators.

The observation that the subscales on instructional procedures and administrative support had higher agreement than the subscales on the basic standards is of special interest. The instruction and support standards were considered to be of secondary importance for distinguishing between CBVE and conventional vocational programs. The finding is consistent with the observations reported by Sorg et al. (1984). It appears that vocational educators have paid more attention to the ornaments of CBVE than to its intrinsic components.

If the results of this study well represent the status of the current understanding of CBVE, much work needs to be completed. National and state vocational education curriculum specialists and other administrative leaders need to clarify their ideas and reach greater agreement about the meaning of CBVE. Until such agreement is attained, strong state department advocacy for CBVE can have only limited impact. There will be continued confusion, misinformation, and slow developmental progress at the local level.

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